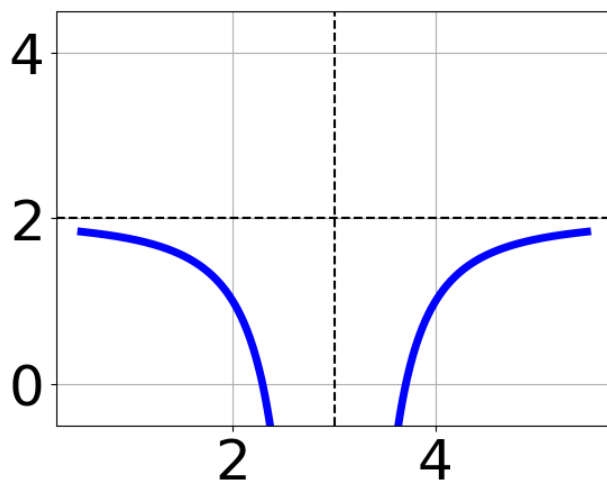1. Choose the equation of the function graphed below.

A. $f(x) = \dfrac{1}{x+3} + 2$

B. $f(x) = \dfrac{-1}{(x-3)^2} + 2$

C. $f(x) = \dfrac{-1}{x-3} + 2$

D. $f(x) = \dfrac{1}{(x+3)^2} + 2$

E. None of the above

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2. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-88}{99x+22} + 1 = \frac{-88}{99x+22}$$

A. $x_1 \in [-1.1, -0.1]$ and $x_2 \in [-0.34, -0.04]$

B. $x_1 \in [-1.1, -0.1]$ and $x_2 \in [0.17, 0.28]$

C. $x \in [0.1, 1.8]$

D. $x \in [-0.22, 2.78]$

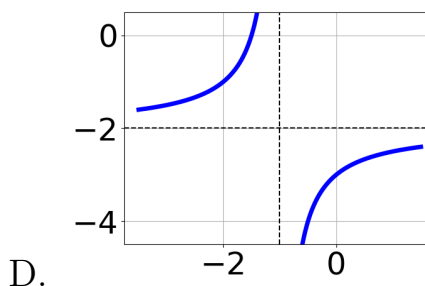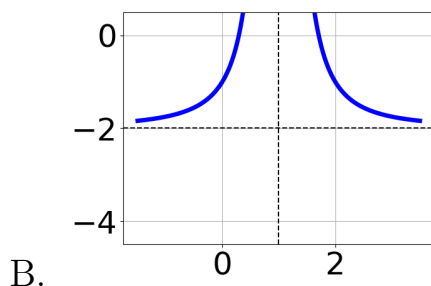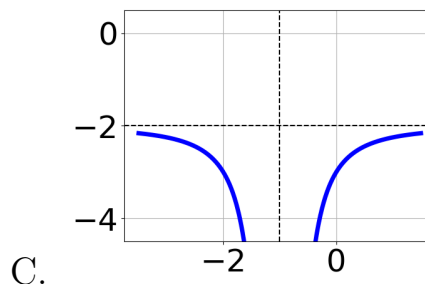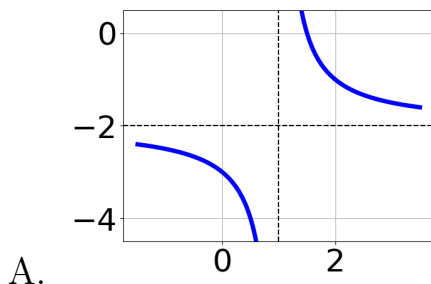E. All solutions lead to invalid or complex values in the equation.

3. Determine the domain of the function below.

$$f(x) = \frac{6}{12x^2 - 12}$$

  A. All Real numbers.

  B. All Real numbers except $x = a$, where $a \in [-17.4, -14.6]$

  C. All Real numbers except $x = a$ and $x = b$, where $a \in [-17.4, -14.6]$ and $b \in [8.4, 9.8]$

  D. All Real numbers except $x = a$, where $a \in [-3.6, -0.6]$

  E. All Real numbers except $x = a$ and $x = b$, where $a \in [-3.6, -0.6]$ and $b \in [0.1, 2.5]$

4. Choose the graph of the equation below.

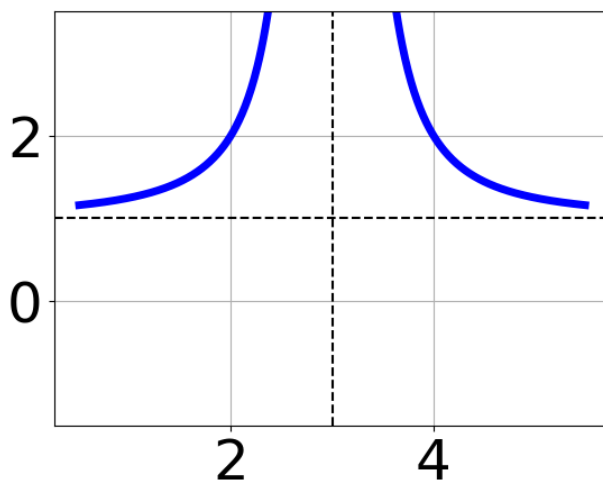$$f(x) = \frac{1}{(x-1)^2} - 2$$

A.

B.

C.

D.

  E. None of the above.

5. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{4x}{-2x+3} + \frac{-4x^2}{-8x^2+4x+12} = \frac{7}{4x+4}$$

A. $x \in [-1.33, 0.28]$

B. $x_1 \in [-0.84, 2.52]$ and $x_2 \in [-0.5, 4.5]$

C. $x_1 \in [-0.84, 2.52]$ and $x_2 \in [-11.07, 0.93]$

D. All solutions lead to invalid or complex values in the equation.

E. $x \in [-3.83, -2.24]$

6. Choose the equation of the function graphed below.

A. $f(x) = \dfrac{-1}{x-3} + 8$

B. $f(x) = \dfrac{-1}{(x-3)^2} + 8$

C. $f(x) = \dfrac{1}{(x+3)^2} + 8$

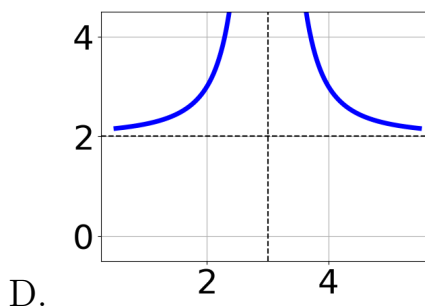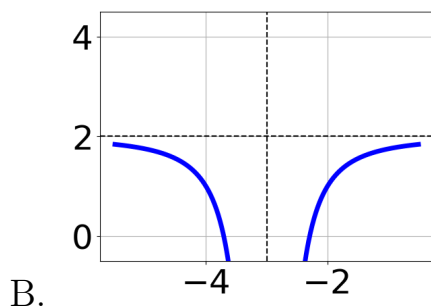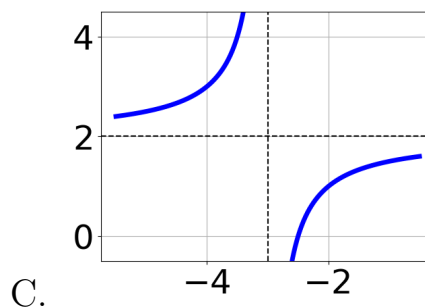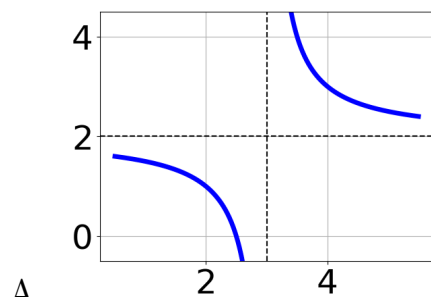D. $f(x) = \dfrac{1}{x+3} + 8$

E. None of the above

7. Determine the domain of the function below.

$$f(x) = \frac{6}{9x^2 - 27x + 18}$$

A. All Real numbers.

B. All Real numbers except $x = a$, where $a \in [8.93, 9.88]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [0.73, 1.14]$ and $b \in [1.29, 2.13]$

D. All Real numbers except $x = a$, where $a \in [0.73, 1.14]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [8.93, 9.88]$ and $b \in [17.21, 18.34]$

8. Choose the graph of the equation below.

$$f(x) = \frac{-1}{x - 3} - 2$$

A.

C.

B.

D.

E. None of the above.

9. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7x}{6x+6} + \frac{-4x^2}{36x^2+60x+24} = \frac{-7}{6x+4}$$

A. $x_1 \in [-1.14, -0.86]$ and $x_2 \in [-0.7, -0.47]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [-1.47, -1.1]$ and $x_2 \in [-0.59, -0.06]$

D. $x \in [-1.14, -0.86]$

E. $x \in [-0.76, -0.61]$

10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{20}{-40x+20} + 1 = \frac{20}{-40x+20}$$

A. $x \in [0.5, 2.5]$

B. $x_1 \in [-1, 0.1]$ and $x_2 \in [-0.5, 2.5]$

C. $x \in [-1, 0.1]$

D. $x_1 \in [0, 1.1]$ and $x_2 \in [-0.5, 2.5]$

E. All solutions lead to invalid or complex values in the equation.